Amendments to the Claims:

1. (Currently Amended) A method for synthesis of a substrate-selective membrane comprising: (a) polymerising a mixture comprising a template, at least one functional monomer, cross-linker, plasticiser and pore-forming component; and (b) extracting the template and porogen to form a flexible and porous polymeric membrane, wherein the template is a molecule selected from the group consisting of biological receptors, nucleic acids, immunosuppressants, hormones, heparin, antibiotics, vitamins, carbohydrates, lipids, saccharides, nucleoproteins, mucoproteins, lipoproteins, peptides and proteins, glycoproteins, glucosaminoglycanes and steroids and the porogen and polymerisation conditions are selected so that the membrane contains pores ranging in size from less than 100 to greater than 500 nm.

2. (Cancelled)

3. (Previously Presented) The method of claim 1 wherein conditions are selected so that the film has a porosity of from about 25 to 90%.

4. (Previously Presented) The method of claim 1 wherein the monomers and/or cross-linker comprise one or more of vinyl, allyl, styrene, acrylic and methacrylic derivatives, and mixtures thereof.

5. (Previously Presented) The method of claim 1 wherein the plasticiser is selected from oligourethane acrylate, butadiene rubber, polyurethane, and caoutchoucs.

6. (Previously Presented) The method of claim 1 wherein the pore-forming component is selected from aliphatic hydrocarbons, aromatic hydrocarbons, esters, alcohols, ketones, ethers, solutions of soluble polymers, and mixtures thereof.

7. (Currently Amended) The method of claim 6 wherein the pore-forming component comprises one or more of: (a) soluble polymers selected from non cross-linked polymers or copolymers of monomers selected from styrene, ring-substituted

styrene, acrylates, methacrylates, dienes, vinylchloride, vinylacetate, polyvinyl chloride, and polyethylene glycol; (b) glycerol; (c) cyclohexanol, and (d) mineral oil.

8. (Withdrawn) The method of claim 1 wherein the pore-forming component comprises insoluble macroporous polymer particles.

9. (Withdrawn) The method of claim 8 wherein said particles are cross-linked copolymers of monomers selected from vinyl, allyl, styrene, acrylic and methacrylic derivatives.

10. (Withdrawn) The method of claim 8 wherein said particles have diameters in the range 1-1000 μm.

11. (Withdrawn) The method of claim 1 wherein the pore-forming component is an inorganic porogen.

12. (Withdrawn) The method of claim 11 wherein the porogen comprises $MgCl_2$, $Mg(Cl0_4)_2$, $ZnCl_2$, Ca Cl_2, SiO_2, $NaNO_3$, $NaOCOCH_3$ and/or NaCl.

13. (Withdrawn) The method of claim 1 including a further step of using the membrane as a separation matrix.

14. (Withdrawn) The method of claim 12 wherein said separation matrix is used for membrane chromatography, or for a catalytic, diagnostic, or absorption process.

15. (Withdrawn) A substrate-selective membrane as produced by the method of claim 1.

16. (Cancelled).

17. (Withdrawn) A separation matrix comprising the substrate-selective membrane of claim 15.

18. (New) The method for synthesis of a substrate-selective membrane of claim 1 wherein the template molecule is further selected from the group consisting of drugs and synthetic molecules possessing biological activity.

19. (New) The method of synthesis of claim 1 wherein the plasticiser is present in the mixture in an amount from 5-50% by weight in the monomer mixture.

20. (New) The method of claim 19 wherein the plasticiser is present in an amount of 5-20% by weight in the monomer mixture.

21. (New) The method of claim 1 wherein said polymerizing the mixture comprises the plasticizer being co-polymerized with the monomers and cross-linker to form a covalently bonded network.

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